National Hand Hygiene NHS Campaign
Compliance with Hand Hygiene - Audit Report

Germs. Wash your hands of them
Prepared for the Scottish Government Health Directorate HAI Task Force
by Health Protection Scotland

NHS Hand Hygiene Campaign 6th Audit Report - March 2009
Acknowledgements

This report would not have been completed within schedule without the cooperation and support of Local Health Board Co-ordinators and other staff within NHS boards who participated in hand hygiene audits. Their collaboration is gratefully acknowledged. In addition, this report would not have been completed without the help and support of the project team and others within HPS. Support from the SGHD HAI Task Force is also gratefully acknowledged.

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For further information go to:
http://www.washyourhandsofthem.com
http://www.hps.scot.nhs.uk/haic/ic/index.aspx
http://www.scotland.gov.uk/Topics/Health/NHS-Scotland/19529/2005
Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>AHP</td>
<td>Allied Health Professional</td>
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<tr>
<td>HAI</td>
<td>Healthcare Associated Infection</td>
</tr>
<tr>
<td>HPS</td>
<td>Health Protection Scotland</td>
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<tr>
<td>ICM</td>
<td>Infection Control Manager</td>
</tr>
<tr>
<td>ICNA</td>
<td>Infection Control Nurses Association (now known as the Infection Prevention Society)</td>
</tr>
<tr>
<td>LHBC</td>
<td>Local Health Board Co-ordinator</td>
</tr>
<tr>
<td>NPSA</td>
<td>National Patient Safety Agency</td>
</tr>
<tr>
<td>RAG</td>
<td>Red, Amber, Green</td>
</tr>
<tr>
<td>SE</td>
<td>Scottish Executive</td>
</tr>
<tr>
<td>SEHD</td>
<td>Scottish Executive Health Department</td>
</tr>
<tr>
<td>SGHD</td>
<td>Scottish Government Health Directorate</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organization</td>
</tr>
</tbody>
</table>

For the purposes of this report the term hand hygiene refers to the process of cleaning hands by performing hand washing or using alcohol hand rub solutions.
1. Executive Summary

The Scottish Government Health Directorate (SGHD) Healthcare Associated Infection (HAI) Task Force requested that a Hand Hygiene Campaign be implemented across NHSScotland. Health Protection Scotland (HPS) was asked to lead on this work and there was a requirement that NHS boards would take part in Campaign activities.

Scotland’s Hand Hygiene Campaign, ‘Germs. Wash your hands of them’ was officially launched in January 2007. As part of the NHS element of this Campaign, monitoring of hand hygiene compliance within NHS boards was deemed appropriate in helping to achieve the Campaign’s aim of reducing avoidable illness amongst patients and staff.

Hand hygiene is considered one of the most effective measures in reducing and preventing the incidence of avoidable illness, in particular healthcare associated infections (HAI)\(^1\)\(^2\). All staff within healthcare settings should be aware of this and perform hand hygiene effectively and in a timely fashion\(^3\)^\(^4\). Audit is one of a number of effective approaches, identified by the World Health Organization (WHO), in ensuring compliance with hand hygiene in healthcare settings\(^5\). On the 26 November 2007 the Cabinet Secretary for Health and Well Being stipulated that each NHS board should reach a target of at least 90% hand hygiene compliance by November 2008. As with the January 2009 Audit Report, from the data presented in this report there is no evidence that any of the NHS boards audited did not meet the target of ‘at least 90%’.

An audit tool and supporting protocol are used by all NHS boards to facilitate a standardised approach across Scotland. NHS boards submit the results of their hand hygiene compliance audits to HPS following mandatory audit periods. A summary of results for 2008/2009 is detailed below.

Please note that the SGHD requirement for NHS boards to adopt a zero tolerance approach to non-compliance with hand hygiene came into effect subsequent to the collection of data represented in this report.

Table 1: Summary of Results

<table>
<thead>
<tr>
<th></th>
<th>1st Quarter Audit Period 5-16 May 2008</th>
<th>2nd Quarter Audit Period 4-15 Aug 2008</th>
<th>3rd Quarter Audit Period 3-14 Nov 2008</th>
<th>4th Quarter Audit Period 14-27 Jan 2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Compliance</td>
<td>88%</td>
<td>90%</td>
<td>93%</td>
<td>93%</td>
</tr>
<tr>
<td>National Compliance: Nurse</td>
<td>92%</td>
<td>94%</td>
<td>95%</td>
<td>95%</td>
</tr>
<tr>
<td>National Compliance: Medical</td>
<td>75%</td>
<td>80%</td>
<td>84%</td>
<td>85%</td>
</tr>
<tr>
<td>National Compliance: Ancillary/Others</td>
<td>85%</td>
<td>87%</td>
<td>92%</td>
<td>91%</td>
</tr>
<tr>
<td>National Compliance: AHP</td>
<td>89%</td>
<td>91%</td>
<td>93%</td>
<td>94%</td>
</tr>
</tbody>
</table>

Details of each NHS board’s hand hygiene compliance are featured within this report. There are a number of limitations to this type of data collection which are also described.
2. Introduction

“Hand hygiene is the entrance door to better infection control and safer patient care”

This report was prepared for the SGHD HAI Task Force. It provides quarterly results on hand hygiene compliance for Scotland, by NHS board and by staff group. Data are presented in graphical format against the ‘at least 90%’ hand hygiene compliance target set by the Cabinet Secretary for Health and Wellbeing in November 2007. Tables featuring the results can also be found in the appendices. Scotland’s 14 operational NHS boards are represented as is one special NHS board (NHS National Waiting Times Centre Board Golden Jubilee National Hospital)

Hand hygiene is considered one of the most effective measures in reducing and preventing the incidence of avoidable illness, in particular healthcare associated infections (HAI), and compliance results are often reported in the published literature. Hand hygiene compliance data from various countries, published by WHO, describe results ranging from 5% to 76% before interventions and 30% to 92% after interventions. Seminal work conducted in Geneva found a baseline compliance rate of 48% rising to 66% after interventions. Similarly, the introduction of a hand hygiene culture-change program in Australia reported a baseline compliance level of 20% increasing to 53% 12 months after the introduction of interventions. Pilot work conducted in two wards within six Trusts across England between June 2003 and January 2004, as part of the ‘clean your hands’ campaign, found results ranging from 39% to 70% across the six Trusts that took part. The success of the pilot campaign led to its introduction across the entire Trust with individual ward compliance levels ranging from 29% to 66%. Such results tend to be based on single clinical areas, hospitals or at times groups of hospitals and compliance rates are dependant on definitions and methods employed for audit, which do differ.

This is the 6th report on hand hygiene compliance in NHS Scotland and presents data at a national level, unlike other studies in the literature presenting hospital or hospital grouping level results.
3. Methodology

3.1 Method

Following rapid review of available hand hygiene audit tools, permission was given to adapt the Infection Control Nurses Association tool (ICNA). Modifications were made to the tool in January 2007 and again in April 2008.

The electronic tool developed was installed on Tablet PCs that were provided to all Local Health Board Coordinators (LHBCs) for use when auditing throughout each NHS board.

Training days were held to provide LHBCs, and other associated infection prevention and control staff, with guidance on using the tool to ensure a standardised approach to collecting the audit data. The tool was tested during this training.

3.2 Definitions and Approach

The HPS National Minimum Audit Dataset Protocol and Resource Pack produced to complement the audit tool detailed information on definitions and on a recommended standardised approach.

3.2.1 Definitions

An audit was defined as the monitoring conducted in one physical location e.g. observations undertaken within one ward. An audit was recommended to be completed within one day.

WHO’s published guidance on ‘Your 5 moments for hand hygiene’ was approved by Scotland’s National Hand Hygiene Campaign Steering Board as appropriate for use in monitoring the opportunities taken for hand hygiene (see Appendix I).

Four groups of staff were defined; nurses, medical, allied health professionals (AHPs) and ancillary/others as in Scottish Government Workforce Planning information. In order to reflect staff groups in NHSScotland (see Table 2 in Appendix II) example percentages were given in relation to the opportunities that could be observed within those staff groups, reflecting the staffing balance within NHSScotland.

‘Achieving national target’ – as quoted within audit reports is defined as compliance with hand hygiene opportunities of at least 90%, as stated by the Cabinet Secretary for Health and Wellbeing’s announcement of 26th November 2007.

‘1st Quarter’ as quoted within the reports relates to the national audit period of:
- 5 - 16 May 2008

‘2nd Quarter’ as quoted within the reports relates to the national audit period of:
- 4 - 15 August 2008

‘3rd Quarter’ as quoted within the reports relates to the national audit period of:
- 3 - 14 November 2008

‘4th Quarter’ as quoted within the reports relates to the national audit period of:
- 14 - 27 January 2009

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i The other elements of the audit tool and associated protocol, for example, hand hygiene technique, were included to support further monitoring and regular feedback to staff at local level and are not detailed as part of this report. The protocol can be found at http://www.washyourhandsofthem.com/hand_hygiene_and_nhs_scotland/08-05-22-audit-and-appendices.pdf
3.2.2 Approach

Approach at NHS board level

The approach at NHS board level included LHBCs, or those others they had trained, performing audits in a range of clinical settings, as defined within the protocol.

Twenty opportunities were recommended to be observed during an audit, i.e. in one day, in order to monitor the compliance of a range of staff with the ‘Your 5 moments for hand hygiene’\textsuperscript{12,13}.

This implied that at least 15 audits could be performed during the mandatory audit periods of two weeks (or 10 working days). This number of audits followed agreement on modifications to the electronic tool in April 2008 and the possibility that audits could be conducted within a specific timescale.

It was recommended that audit data results were fed back to staff. Transfer of data to HPS was conducted based on advice given by HPS and detailed within the protocol.

Approach at HPS level

HPS project support was available at all times to answer queries. An approach within HPS to ensure safe and secure data management was adhered to, as detailed within the protocol.

Quality assurance and reporting standard operating procedures were also followed within HPS. Validation of the data was addressed through the use of Microsoft Access quality assurance queries.

Quality assurance was enhanced further by the fact that the audit tool was designed with built in rules to reduce the risk of missing data or impossible or illogical entries. Further cross checking of the final audit results produced from the database with an NHS board was performed. (NB. A Scotland-wide data quality assurance exercise is also planned for 2009).

The method for establishing the Scotland-wide compliance percentage and staff group compliance results involved weighting NHS board compliance results by the total number of staff in each Board, and also by the number of staff they have for the four defined staff groups\textsuperscript{15}.

The confidence intervals for each NHS board’s compliance rate were calculated and these take into account the overall number of hand hygiene opportunities observed.

Notes

The above noted calculations were added following discussions on the data contained in the first five national audit reports\textsuperscript{16,17,18,19,20} and the fact that the number of audits being collated were increasing.
4. Results

4.1 Audit results for Compliance with Hand Hygiene Opportunities - Scotland

Based on the data submitted by NHS boards, audit results for compliance with hand hygiene opportunities have been established for Scotland as a whole, for each national quarterly audit period (first quarterly report published July 2008).

Figure 1: Audit Results for Compliance with Hand Hygiene Opportunities - Scotland

(The vertical line represents the at least 90% compliance target set by the Cabinet Secretary for Health and Wellbeing in November 2007)

Figure 1 indicates that compliance increased from 88% in the 1st Quarter audit period, to 90% in the 2nd Quarter audit to 93% in the 3rd Quarter audit period, and this compliance score has been maintained in this 4th Quarter audit period.

Also see Appendix III for Table 3: Audit Results for Compliance with Hand Hygiene Opportunities – Scotland
4.2 Audit Results for Compliance with Hand Hygiene Opportunities by NHS board

Audit results for compliance with hand hygiene opportunities are presented for each NHS board for all national quarterly audit periods (first quarterly report published July 2008). 

Figure 2 indicates that compliance percentages for the 1st audit period ranged from 79% to 100% (mean 88%). For the 2nd Quarter audit period they ranged from 85% to 98% (mean 90%). For the 3rd Quarter audit period they ranged from 89% to 97% (mean 93%) and for this 4th Quarter audit period they ranged from 89% to 98% (mean 93%).

The target of ‘at least 90%’ falls within the upper confidence intervals for every NHS board (See Appendix IV for Table 4: Audit results for Compliance with Hand Hygiene Opportunities by NHS board. This gives details of the numbers of opportunities observed and taken within each NHS board, along with 95% confidence intervals).

ii The NHS National Waiting Times Centre is categorised as a Special Board as its circumstances are exceptionally different to other NHS Operational Boards (for example there are not multiple hospitals within this Board).
4.3 Audit results for Compliance with Hand Hygiene Opportunities by Staff Group

Overall audit results for compliance with hand hygiene opportunities are presented for each of the defined staff groups for all national quarterly audit periods (first quarterly report published July 2008\(^8\)).

Figure 3: Audit Results for Compliance with Hand Hygiene Opportunities by Staff Group

![Bar chart showing compliance percentages for different staff groups across various audit periods.](Figure3)

(The vertical line represents the at least 90% compliance target set by the Cabinet Secretary for Health and Wellbeing in November 2007)

Figure 3 indicates that compliance percentages for all the defined staff groups in the 1st Quarter audit period range from 75% to 92%. For the 2nd Quarter audit period they ranged from 80% to 94%. For the 3rd Quarter audit period they ranged from 84% to 95% and for the 4th Quarter audit period they ranged from 85% to 95%.

Also see Appendix V for Table 5: Audit Results for Compliance with Hand Hygiene Opportunities by Staff Group including 95% confidence intervals.
5. Discussion

This is the sixth report to present hand hygiene compliance data at a national level and provides an ongoing description of compliance throughout NHSScotland.

To date there have been seven national audit periods; three in 2007, three in 2008 and one in 2009.

In 2007 compliance within NHSScotland increased from 68% to 87%\(^{16,17}\), and then in 2008 from 88% in Quarter 1\(^{18}\) to 90% in Quarter 2\(^{19}\), 93% in Quarter 3\(^{20}\) and again 93% in this latest report. The results for 2007, 2008 and 2009 suggest that compliance in Scotland compares favourably to rates from hospitals/single clinical areas of 5% to 92% within the published literature\(^ {3,6,7,8}\). It also demonstrates a continued and sustained improvement in compliance from each audit period to the next.

The target of ‘at least 90%’ compliance by November 2008, set by the Cabinet Secretary for Health and Wellbeing in November 2007, was met by NHSScotland in the 3rd Quarter audit period and again has been met in this 4th Quarter audit period demonstrating a high level of commitment within NHS boards to raising awareness of the importance of hand hygiene.

Results for each individual NHS board, ranged from 50%-94% and 59%-94% in the 1st and 2nd audit periods\(^ {16}\) respectively, 75% to 97% in the 3rd audit period\(^ {17}\), 79% to 100% in the 1st Quarter of 2008\(^ {18}\), 85% to 98% in the 2nd Quarter\(^ {19}\), 89%-97% in the 3rd Quarter\(^ {20}\) and 89%-98% in this Quarter. This also compares favourably to the published literature\(^ {3,6,7,8}\). Further comparisons are hampered by the absence of any other published reports of hand hygiene compliance on a country wide level. By presenting 95% confidence intervals around the NHS board results, it is possible to assess the accuracy of these observed results (which are an estimate of the true overall compliance obtained through observation of a sample). Of the fifteen NHS boards, fourteen had an observed compliance of ‘at least 90%’ in this Quarter and it should be noted that for a further one Board the target of ‘at least 90%’ falls within the 95% confidence interval for the compliance rate. From the data presented in this report there is no evidence that any of the NHS boards audited have not met the target of ‘at least 90%’. Additionally, one Board demonstrated a statistically significant increase in their compliance between Quarter 3 and this Quarter for 2009. Any other small changes presented that show either minimal increase or decrease in their compliance percentages within NHS boards should be interpreted with caution as these are not statistically significant and NHS boards might still see future fluctuations with a potential for the ‘at least 90%’ target to not always be met.

The results previously reported for the staff groupings also concur with the evidence found within the published literature, which states that overall certain staff groups are consistently associated with low compliance\(^ {3,9,21}\). The results featured in this report indicate that compliance for Nurse, Medical and AHP staff groups has either been maintained or increased. The compliance observed for Ancillary/others has decreased by 1% however, the result obtained remains above the ‘at least 90%’ compliance target. Although medical staff compliance has shown sustained improvement over the 4 Quarters, 90% compliance has still not been achieved. As a range of studies show that compliance varies between staff groups\(^ {3,9,21}\) it is necessary to understand any variation in order to target interventions at relevant groups to improve compliance with hand hygiene.

WHO clearly summarises that there are many factors that influence adherence to hand hygiene compliance, including skin irritation, lack of supplies and time pressures. In addition, sustainability over time can also be an ongoing challenge\(^ {3}\). Efforts continue throughout NHSScotland to ensure that both recommended initiatives such as the supply of hand hygiene solutions\(^ {22}\) and locally identified actions to improve compliance are implemented. Other elements of the Campaign have also been aimed at promoting sustainable improvements in hand hygiene throughout Scotland.

The exact combination of activities that will have the greatest impact on achieving and sustaining hand hygiene compliance is not currently known. Local activities to improve compliance will differ based on local assessment of need. The fact that overall awareness of the importance of hand hygiene appears to have increased throughout the life time of the Campaign is in itself a marker of success and is essential for such an attitude driven activity if NHSScotland is to change behaviours and sustain long term compliance.
6. Limitations

- It should be noted that hand hygiene is considered one of the most effective measures in reducing avoidable illness such as HAI. Therefore, caution should be taken when attempting to review these results against any available infection rates.

- Caution should also be taken when attempting to make any comparisons between NHS boards as they differ in their composition. The overall aim of presenting these results is to allow monitoring within NHS boards and to give an indication of hand hygiene compliance amongst staff.

- It was not the aim of this national report to describe any other aspects of hand hygiene performance out with compliance with opportunities, e.g. use of the correct hand hygiene technique.

- It should be acknowledged that in the context of this Campaign, auditing aims to measure processes that contribute to effective hand hygiene performance. Audit results do not present the same robust scientific data as surveillance data, however they aim to provide valuable and contextual information that can help target hand hygiene activities to improve compliance where required in each area by utilising a cyclical approach and this involves feedback of results to NHSScotland staff.

- A number of limitations may be associated with ‘being observed’ and the role of auditors:
  - It has been recognised that ‘being observed’ in practice, e.g. during auditing, can lead to falsely elevated compliance rates. Entry into wards in order to conduct audits was considered and a variety of strategies suggested in an attempt to ensure changes in staff practices related to being observed were minimised as far as possible, e.g. it was preferable that LHBCs said they were in an area to observe aspects of infection prevention and control practices if asked about this, without focussing on the subject of hand hygiene in particular. On one hand it is often expected that over time any effects of being observed should diminish. On the other hand, it is acknowledged that awareness of the role of LHBCs could be raised over time and this might impact on results. However, it should be considered that the staff being observed are busy people with a range of considerations on their minds when providing care and any effect of ‘being observed’ might not always be present. Additionally, in the broadest terms, any way in which hand hygiene compliance can be improved in both the short and long term is welcomed, bearing in mind that hand hygiene is essentially an attitude driven activity.
  - It has been considered that there may be a risk of bias associated with auditors (LHBCs) not being fully ‘independent observers’, particularly over time, and unconsciously introducing bias or personal opinion to the results they enter in the audit tool. As described in the discussion, a data quality assurance exercise is planned for 2009 to address any potential for this bias. The duration of an audit is proposed to be at most one full day/shift period (whether this is day, night, weekday or weekend). If a full audit is completed in less than a day/shift the auditor can progress on to auditing a new area. Auditors should not, however, return within a ‘National Campaign audit period’ to a specific ward where they have already audited.
  - Consideration has also been given to a review of whether all LHBCs chose the same opportunities to score compliance against. However, as a wide range of factors affect this decision, e.g. activities vary considerably in day-to-day practice and therefore the occurrence of opportunities varies each time an audit is conducted, this is not deemed a practical national exercise at this time. Guidance on the application of the ‘Your 5 moments’ is available from http://www.washyourhandsofthem.com/support/5moments-support.html.
  - The areas within NHS boards/hospitals audited during the national audit periods were not expected to be the same, however, this may happen at times. If they were, or are, exactly the same for each audit there would be no guarantee that the practices of the same staff would be audited, therefore, such data are not necessarily comparable.
  - Areas to be audited were recommended within the protocol, however, there will have been variation between NHS boards due to their ranging compositions. The numbers of audits completed by each NHS board also varies as can be seen in Appendix IV.
7. Way Forward

- The HAI Action Plan published by the SGHD in August 2008 stipulated that all NHS boards must report compliance with hand hygiene bi-monthly both locally and nationally. The next National Audit Report is due to be published in May 2009 and thereafter in July, September and November 2009 and January 2010.

- The Cabinet Secretary for Health and Wellbeing announced on the 26th January 2009 that all NHS boards must implement a zero tolerance policy towards non compliance with hand hygiene as stated in the Chief Executive Letter to NHS boards.

- To support NHS boards to achieve this zero tolerance approach to non-compliance with hand hygiene, a professional marketing campaign will be launched during March 2009 by the Cabinet Secretary for Health and Wellbeing. This was preceded in January 2009 by a rerun of the previously successful public facing campaign.

- A range of other on-going national and local activities to enhance compliance are planned including collaborative work with those leading on the Scottish Patient Safety Programme.
8. References


10. ICNA. Audit tools for monitoring infection control standards. 2004:ICNA, UK.

11. ICNA. Audit tools for monitoring infection control guidelines within the community setting. 2005:ICNA, UK.


Your 5 moments for HAND HYGIENE

1. BEFORE PATIENT CONTACT
   - WHEN? Clean your hands before touching a patient when approaching him or her
   - WHY? To protect the patient against harmful germs carried on your hands

2. BEFORE ASEPTIC TASK
   - WHEN? Clean your hands immediately before any aseptic task
   - WHY? To protect the patient against harmful germs, including the patient’s own germs, entering his or her body

3. AFTER BODY FLUID EXPOSURE RISK
   - WHEN? Clean your hands immediately after an exposure risk to body fluids (and after glove removal)
   - WHY? To protect yourself and the health-care environment from harmful patient germs

4. AFTER PATIENT CONTACT
   - WHEN? Clean your hands after touching a patient and his or her immediate surroundings when leaving
   - WHY? To protect yourself and the health-care environment from harmful patient germs

5. AFTER CONTACT WITH PATIENT SURROUNDINGS
   - WHEN? Clean your hands after touching any object or furniture in the patient’s immediate surroundings, when leaving - even without touching the patient
   - WHY? To protect yourself and the health-care environment from harmful patient germs

Germs. Wash your hands of them.
Appendix II – Staff Group Definitions

For the purposes of the audit the staff groups provided as options are defined, however, this is not an exhaustive list.

Table 2: Staff Group Definitions

<table>
<thead>
<tr>
<th>Staff Group</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurse</td>
<td>All nurses, midwives, health visitors – both registered and non-registered, i.e. including healthcare support.</td>
</tr>
<tr>
<td>Medical</td>
<td>All doctors and dentists – qualified and in-training, including consultants, GPs, staff and associate specialists.</td>
</tr>
<tr>
<td>Ancillary staff and professionals who have patient contact</td>
<td>Pharmacists, psychologists, Medical Technical Officers (MTO) or Healthcare Scientists, for example, cardiac, respiratory and audiology technicians, phlebotomists, medical photographers, medical records staff, domestic staff, housekeeping staff, porters, catering staff.</td>
</tr>
<tr>
<td>Allied Health Professionals (AHP)</td>
<td>Arts therapists, podiatrists, dieticians, occupational therapists, orthoptists, physiotherapists, radiographers, speech and language therapists, prosthetists and orthotists, and including healthcare support that work within these groups, e.g. dietetic assistants.</td>
</tr>
</tbody>
</table>
### Appendix III - Audit Results for Compliance with Hand Hygiene Opportunities – Scotland

Table 3: Audit Results for Compliance with Hand Hygiene Opportunities – Scotland

<table>
<thead>
<tr>
<th>Audit Period</th>
<th>1st Quarter</th>
<th>2nd Quarter</th>
<th>3rd Quarter</th>
<th>4th Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>88%</td>
<td>90%</td>
<td>93%</td>
<td>93%</td>
</tr>
</tbody>
</table>
### Table 4: Audit Results for Compliance with Hand Hygiene Opportunities by NHS board including 95% confidence intervals

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Opps Taken</td>
<td>% (CI)</td>
<td>Opps Taken</td>
<td>% (CI)</td>
</tr>
<tr>
<td>NHS Western Isles</td>
<td>300</td>
<td>289</td>
<td>96% (94%, 98%)</td>
<td>300</td>
</tr>
<tr>
<td>NHS Tayside</td>
<td>300</td>
<td>258</td>
<td>86% (82%, 90%)</td>
<td>360</td>
</tr>
<tr>
<td>NHS Shetland</td>
<td>200</td>
<td>157</td>
<td>79% (73%, 85%)</td>
<td>200</td>
</tr>
<tr>
<td>NHS Orkney</td>
<td>300</td>
<td>299</td>
<td>100% (99%, 100%)</td>
<td>400</td>
</tr>
<tr>
<td>NHS Lothian</td>
<td>420</td>
<td>367</td>
<td>87% (84%, 90%)</td>
<td>420</td>
</tr>
<tr>
<td>NHS Lanarkshire</td>
<td>320</td>
<td>260</td>
<td>81% (77%, 85%)</td>
<td>300</td>
</tr>
<tr>
<td>NHS Highland</td>
<td>300</td>
<td>278</td>
<td>93% (90%, 96%)</td>
<td>300</td>
</tr>
<tr>
<td>NHS Greater Glasgow &amp; Clyde</td>
<td>300</td>
<td>262</td>
<td>87% (83%, 91%)</td>
<td>300</td>
</tr>
<tr>
<td>NHS Grampian</td>
<td>660</td>
<td>547</td>
<td>83% (80%, 86%)</td>
<td>640</td>
</tr>
<tr>
<td>NHS Forth Valley</td>
<td>440</td>
<td>426</td>
<td>97% (95%, 99%)</td>
<td>500</td>
</tr>
<tr>
<td>NHS Fife</td>
<td>300</td>
<td>272</td>
<td>91% (88%, 94%)</td>
<td>300</td>
</tr>
<tr>
<td>NHS Dumfries &amp; Galloway</td>
<td>300</td>
<td>274</td>
<td>91% (88%, 94%)</td>
<td>300</td>
</tr>
<tr>
<td>NHS Borders</td>
<td>320</td>
<td>289</td>
<td>90% (87%, 93%)</td>
<td>320</td>
</tr>
<tr>
<td>NHS Ayrshire &amp; Arran</td>
<td>320</td>
<td>300</td>
<td>94% (91%, 97%)</td>
<td>300</td>
</tr>
<tr>
<td>National Waiting Times Centre</td>
<td>300</td>
<td>244</td>
<td>81% (77%, 85%)</td>
<td>300</td>
</tr>
</tbody>
</table>

*Opps obs = opportunities observed  
**Opps taken = opportunities taken
## Appendix V - Audit Results for Compliance with Hand Hygiene Opportunities by Staff Group with 95% confidence intervals

Table 5: Audit Results for Compliance with Hand Hygiene Opportunities by Staff Group with 95% confidence intervals

<table>
<thead>
<tr>
<th>Professional Staff Group</th>
<th>1st Quarter Audit Period (%) 5-16 May 2008</th>
<th>2nd Quarter Audit Period (%) 4-15 Aug 2008</th>
<th>3rd Quarter Audit Period (%) 3-14 Nov 2008</th>
<th>4th Quarter Audit Period (%) 14-27 Jan 2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurse</td>
<td>92% (91% to 93%)</td>
<td>94% (93% to 95%)</td>
<td>95% (94% to 96%)</td>
<td>95% (94% to 96%)</td>
</tr>
<tr>
<td>Medical</td>
<td>75% (70% to 80%)</td>
<td>80% (76% to 84%)</td>
<td>84% (80% to 88%)</td>
<td>85% (81% to 89%)</td>
</tr>
<tr>
<td>Ancillary/Others</td>
<td>85% (82% to 88%)</td>
<td>87% (84% to 90%)</td>
<td>92% (89% to 95%)</td>
<td>91% (88% to 94%)</td>
</tr>
<tr>
<td>AHP</td>
<td>89% (86% to 92%)</td>
<td>91% (88% to 94%)</td>
<td>93% (90% to 96%)</td>
<td>94% (92% to 96%)</td>
</tr>
</tbody>
</table>